

REMARKS

Claims 1-6, 8-12, and 14-24 are now pending. Claims 1-12 and 14-24 stood rejected in the final Office Action dated July 22, 2003. With this amendment claim 7 has been canceled and claims 1-3, 8-9, 11, 19-20, and 23-24 have been amended. Applicants would like to thank Examiner Soderquist for the courtesies he extended during the telephone interview on October 31, 2003. Applicants have amended the claims as discussed with the Examiner to place this application further toward condition for allowance.

Claim Informalities

The Examiner objected to claims 19-20 because the Amendment dated May 2, 2003, inadvertently changed the word "kraft" to "draft." Applicants have herein amended claims 19 and 20 to correct this change. This amendment neither adds new matter nor constitutes a narrowing amendment.

Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner rejected claims 19-20 and 23-24 under 35 U.S.C. § 112, second paragraph, for failing to point out particularly and claim distinctly the subject matter that the Applicants regard as their invention. Specifically, the Examiner believes that claims 19-20 do not clearly claim a pump either as a structural limitation or as functionally modifying the structure to allow liquid to flow through the flow cell. Claims 19-20 have been amended to recite positively an ATR tunnel flow cell comprising a pump and

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further reciting the pumping of the kraft liquor stream through the flow cell. This amendment neither adds new matter nor constitutes a narrowing amendment.

The Examiner further states that claims 23-24 are indefinite because there is no positively recited structure that either allows or prevents dilution. Applicants have amended claims 23-24 to recite that the kraft liquor stream flowing through the ATR tunnel flow cell is undiluted, thus removing any reference to a structure that may or may not allow dilution to occur. This amendment neither adds new matter nor constitutes a narrowing amendment. With these amendments to claims 19-20 and 23-24 Applicants submit that the Examiner's rejections have been overcome and respectfully request the allowance of the pending claims.

Rejections Based Primarily on Karlberg et al.

35 U.S.C. § 102(b). The Examiner rejected claim 11 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,641,966 to Karlberg et al. Specifically, the Examiner believes that this reference discloses a method of determining physical and/or chemical properties in water samples containing suspended substances and/or particles, including making such determinations at a frequency range of 190-820 nm (see Final Office Action at § 4). Applicants respectfully traverse this rejection.

For a reference to anticipate, a single prior art reference must disclose each and every element as set forth in the claimed invention. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1997); M.P.E.P. § 2131. Claim 11, as amended herein, recites a system "providing a liquid kraft pulp stream" and "wherein the device is an attenuated total reflectance device." Karlberg et al., however, does not disclose

either of these claimed elements. The Examiner has already recognized both the reference's non-disclosure of a liquid kraft pulp stream (see Final Office Action at § 9) and lack of an ATR device (see Final Office Action at § 6). Therefore, Karlberg et al. does not recite each and every element of claim 11 and cannot serve to anticipate the claim. Applicants therefore respectfully request the withdrawal of this rejection.

35 U.S.C. § 103(a). The Examiner also rejects claims 12, 14-15, 20, 22, and 24 under 35 U.S.C. § 103(a) as obvious over Karlberg et al. and further in view of Doyle et al. Specifically, the Examiner recognizes that Karlberg et al. does not disclose the use of an ATR device and relies on Doyle et al. for an ATR tunnel flow cell configuration. See Final Office Action at § 6. Applicants respectfully traverse this rejection.

Claims 12, 14-15, 20, 22, and 24 each depend directly or indirectly from amended claim 11. In order to establish a *prima facie* case of obviousness, the Examiner must show, in part, that the prior art references teach or suggest all the claim limitations. M.P.E.P. § 2143. As discussed above, Karlberg et al. does not disclose the "liquid kraft pulp stream" recited in amended claim 11. The Examiner's further reliance on Doyle et al. does not remedy this deficiency of Karlberg et al. The Examiner has previously recognized that Doyle et al. does not teach or suggest the recited liquid kraft pulp stream of claim 11 (see Final Office Action at p. 7, lines 7-16); therefore, Karlberg et al. and Doyle et al. cannot properly combine to render obvious claims 12, 14-15, 20, 22, and 24. As a result, Applicants submit that the Examiner has not proven a *prima facie* case of obviousness based on Karlberg et al. further in view of Doyle et al., and respectfully request that this rejection be withdrawn.

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Rejections Based Primarily on Danielsson et al.

The Examiner rejected claims 1-2, 4-13, and 16-17 under 35 U.S.C. § 103(a) as obvious over Danielsson et al. in view of Karlberg et al. and Ley et al. The Examiner states that Danielsson et al. discusses UV-Vis measurements in pulp process liquors and believes that one of ordinary skill would be motivated to combine its disclosure with the detection wavelengths of Karlberg et al. and the hydroxyl ion absorption frequency disclosed in Ley et al. to achieve the claimed invention. Applicants respectfully traverse this rejection.

The English-language abstract of the German article Ley et al. indicates that the absorption spectra of NaOH, Ba(OH)₂, and Ca(OH)₂ water solutions all revealed a maximum at 1860 A.U., which "must be characteristic of OH ion." From this abstract, Applicants submit that, at most, Ley et al. reveals the numeric absorption maximum of hydroxyl ion in water solutions. Ley et al. does not disclose how to determine the concentration of hydroxyl ions when they are a component of a liquid kraft liquor stream, as recited in independent claims 1 and 9. Ley et al. also does not apparently use an attenuated total reflectance device to generate absorption spectra.

The other references do not remedy these deficiencies of the Ley et al. disclosure. Danielsson et al. does not teach or suggest spectroscopic measurements below 210 nm and, therefore, cannot determine the multiple individual chemical component concentrations of a liquid kraft liquor stream as recited in the rejected claims. In fact, Danielsson et al. focuses on sulfide concentrations and measures only total solute content, not individual solute concentrations. See abstract. Karlberg et al., while the Examiner suggests that it shows simultaneous measurements of multiple

compounds in a sample solution, does not teach or suggest using any simultaneous measurement process in a liquid kraft liquor stream. Therefore, the cited references, either separately or in combination, do not teach or suggest determining multiple individual chemical component concentrations of a liquid kraft liquor stream. Therefore, these references cannot serve to render the claims *prima facie* obvious.

Assuming *arguendo* that the cited references disclose each and every limitation of the pending claims, one of ordinary skill in the art would have no suggestion or motivation to combine their teachings and achieve the claimed invention. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggest the desirability of the combination." M.P.E.P. § 2143.01 (*citing In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)). Danielsson et al. itself never suggests determining individual concentrations of solute chemicals in paper process liquors. Even though Karlberg et al. may disclose determining multiple solution component concentrations, it provides no suggestion to use its disclosure in kraft liquor streams, and further provides no suggestion to detect components like sodium hydroxide and sodium carbonate in these kinds of streams. Ley et al. determines hydroxyl ion absorption maxima in water solutions and not kraft liquor streams. Applicants submit that these references never suggest the desirability of their combination and thus cannot render the pending claims *prima facie* obvious. Applicants respectfully request that this rejection be withdrawn.

The Examiner also rejects claims 3, 14-15, and 18-24 under 35 U.S.C. § 103(a) as obvious over Danielsson et al. in view of Karlberg et al. and Ley et al., and further in view of Doyle et al. The Examiner believes that Doyle et al. describes a tunnel flow cell

configuration that one of ordinary skill in the art would be motivated to combine with the teachings of the other cited references to render obvious the claimed invention.

However, the specific configuration of Doyle et al. does not remedy the deficiencies of the other references, neither helping to teach or suggest all the claim limitations nor providing a suggestion or motivation to combine the references' teachings. Doyle et al. goes no farther in determining the multiple individual chemical component concentrations of a liquid kraft liquor stream than the other references. Therefore, Applicants respectfully request that this rejection be withdrawn.

Conclusion

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-6, 8-12, and 14-24 in condition for allowance. Applicants submit that the proposed amendments of claims 1-3, 8-9, 11, 19-20, and 23-24 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as earlier examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Furthermore, Applicants respectfully point out that the Final Office Action by the Examiner presented some new arguments as to the application of the art against the Applicants' invention. It is respectfully submitted that the entering of this Amendment After Final would allow the Applicants to reply to the final rejections and place the application in condition for allowance. Finally, Applicants submit that the entry of this

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amendment would place the application in better form for appeal, should the Examiner continue to dispute the patentability of the pending claims.

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and continued examination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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